

# How Do Children Interpret Novel Control Verbs?

Ana Lúcia Santos, Alice Jesus, and Silvana Abalada

In this paper, we discuss children's initial preferences concerning the interpretation of control verbs.

It is generally assumed that once the child is able to interpret obligatory control, subject control with *want*-type verbs is not problematic. In contrast, the interpretation of obligatory control with ditransitive verbs raises different issues. In general, it is assumed that subject control with *promise*-type verbs is difficult for preschool children, a fact resulting from a preference for a 'closer' controller and favouring object control readings with ditransitive verbs. As we will see, this preference for a closer controller can be derived from either the analysis of control as movement (Hornstein, 1999) or from alternative accounts, such as an analysis of subject control in ditransitives as an effect of *smuggling* (Belletti & Rizzi, 2013).

The present paper aims at defying this view, by testing how children interpret the subject of an infinitive under a novel ditransitive verb. Since the experiment is run in European Portuguese, a language with inflected infinitives, we will address the possible effect of an inflected infinitive in the interpretation of (object) control contexts. Possible effects were expected in the type of interpretation and in reaction times. It is shown that even though children prefer object control readings in these contexts, they give more subject control readings than adults, which is contrary to the expectation. No effect of the inflected infinitive was found in the interpretation of these particular contexts.

## 1. Acquisition of control structures

C. Chomsky (1969) studied the interpretation of control by children between 5 and 10 years. A relevant finding of this study is that children overgeneralize object control readings to complements of *promise*, i.e. they present similar readings for the complements of *promise* and *tell* (1a and 1b illustrate the type of sentences tested by C. Chomsky, using an act-out task).

---

\* Ana Lúcia Santos, Faculdade de Letras, Centro de Linguística, Universidade de Lisboa, als@letras.ulisboa.pt; Alice Jesus, Centro de Linguística, Universidade de Lisboa; Silvana Abalada, Centro de Linguística, Universidade de Lisboa. We would like to thank Maria do Carmo Lourenço-Gomes (U. Minho), who helped to build the experiment. This work was funded by Fundação para a Ciência e a Tecnologia, under the Strategic Project UID/LIN/00214/2013.

- (1) a. Bozo tells Donald to hop up and down. Make him hop.  
           (object control: Donald hops!)
- b. Bozo promises Donald to do a somersault. Make him do it.  
           (subject control: Bozo does a somersault!)

This type of results, which C. Chomsky (1969) explains as a result of the Minimal Distance Principle (Rosenbaum, 1967), is equally explained by the Minimal Link Condition, as Hornstein (1999) argues. Hornstein uses these acquisition facts as an argument for the analysis of Control as a case of A-movement. To this extent, a difficulty with subject control in structures such as (1b) may be seen as the effect of intervention in A-movement structures: when moving [Bozo] in (1b) from the embedded subject position to the matrix subject position, it would cross the object, which would act, at least in children's grammars, as an intervener (see Hornstein & Polinsky, 2010; Boeckx, Hornstein & Nunes, 2010, for discussion; but cf. Mateu, 2016).

An alternative explanation for the difficulty with subject control with *promise*-type verbs is found in Belletti & Rizzi (2013). This explanation is equally based on the concept of intervention, following from the notion of Relativized Minimality (Rizzi, 1990). However, according to this analysis, in the case of subject control crossing an intervener (as in control with *promise*), the difficulties should not be explained in terms of featural intervention, as it is the case with object relatives and other A-bar movement structures (Friedmann, Belletti & Rizzi, 2009). Instead, the difficulties deriving subject control with *promise*-type verbs would be a result of problems with the operation allowing to avoid intervention in the derivation of these structures, i.e. a *smuggling* operation – to a certain extent, in parallel with what has been suggested for passives (see Snyder & Hyams, 2015). Object control, in contrast, would not involve *smuggling* (we refer to Belletti & Rizzi, 2013, for details).

In general, all these accounts of control predict that preschool children give target readings to object control structures. Object control is what is expected in ditransitives given the Minimal Link Condition (A-movement approach to Control); object control does not involve *smuggling* in the analysis put forward by Belletti & Rizzi (2013).

However, preceding work on the acquisition of European Portuguese (Agostinho, 2014; Agostinho, Santos & Duarte, 2018) has shown that even though a preference for object control is found in preschool children, as described by the previous literature, object control is also subject to development, with 3 year-olds giving around 30% subject control answers to object control items.

In this paper, we will further investigate this issue, by looking at how children interpret novel verbs (pseudowords), something that has not previously been done.

## 2. Object Control and inflected infinitives in European Portuguese

The sentence in (2) is a case of object control in Portuguese. As shown in (2b), the only interpretation available for the subject of the embedded infinitive is an interpretation in which it is controlled by the object.

- (2) a. A mãe obrigou as crianças a comer  
           the mother forced the children PREP eat.INF  
           ‘Mummy made the children eat.’  
       b. [A mãe]<sub>k</sub> obrigou [as crianças]<sub>i</sub> [a \_\_\_<sub>i/\*k/\*m</sub> comer].

There is, however, a fact concerning object control structures in European Portuguese that should be taken into account when object control is discussed: inflected infinitives also occur in these structures. Even though inflected infinitives are generally not obligatory control structures, in this context they display obligatory control (but cf. Martins & Nunes, 2017). This is illustrated in (3) and (4). The inflected infinitive in (3) is a typical inflected infinitive, which corresponds to a no-control context. As we can see in (3a), it licenses a nominative subject; in (3b) we see that when null, the subject of this inflected infinitive is not controlled. In contrast, the inflected infinitive under an object control verb (in 4) presents an object control reading – see the parallel between (4) and (2).

- (3) a. A mãe lamentou {as crianças / elas} mentirem.  
           the mother regretted the children they lie.INF.3PL  
       b. [A mãe]<sub>i</sub> lamentou \_\_\_<sub>k/\*i</sub> mentirem.  
  
 (4) a. A mãe obrigou as crianças a comerem.  
           the mother forced the children PREP eat.INF.3PL  
           ‘Mummy made the children eat.’  
       b. [A mãe]<sub>k</sub> obrigou [as crianças]<sub>i</sub> [a \_\_\_<sub>i/\*k/\*m</sub> comerem].

The fact that the inflected infinitive in (4) creates an obligatory control context makes it an exceptional context among inflected infinitive contexts and some researchers discuss whether the inflected infinitive in control structures signals a particular reading, namely a partial control reading. In this paper, we only focus on object control structures, leaving other contexts aside. Modesto (2010), working on Brazilian Portuguese, suggests that inflected infinitives under object control verbs may justify a particular case of obligatory control: partial control. Modesto’s example is quoted in (5).

- (5) O Pedro<sub>1</sub> convenceu/instruiu/instigou/induziu a Dani<sub>2</sub> a  
 the Pedro convinced/instructed/enticed/induced the Dani PREP  
 PRO<sub>1+2/2+ / \*1/\*3</sub> viajarem amanhã.  
 PRO travel.INF.3PL tomorrow  
 'Pedro convinced/instructed/enticed/induced Dani that they should travel  
 tomorrow.'

As shown in (5), the plural in the inflected infinitive induces a reading in which the embedded subject is understood as coreferent with the (singular) object controller and some other entity, either the matrix subject or any other salient entity in discourse. Notice that the first case corresponds to what Landau (2013) defines as split control and the second case what he defines as partial control, in a stricter sense. Both cases are obligatory control, since the object controller must always be included in the reference. For European Portuguese, only Sheehan (2018) discussed the effects on interpretation of inflected infinitives under object control verbs. The results obtained are not clear: with a partial control reading, more acceptance of inflected than uninflected infinitive was found; but with an exhaustive control reading, inflected infinitives were also accepted, at the same level as uninflected infinitives.

Overall, this clearly shows that the effects of inflected infinitives in object control contexts are still not completely known. However, it is clear that inflected infinitives under object control verbs have controlled subjects, a fact contrasting with what is known to happen with other inflected infinitive clauses, which are not control contexts. To this extent, inflected infinitives in this context may create the type of variability in the input which might justify a difficulty in the acquisition process: taking together this type of context and the typical no-control contexts where inflected infinitives are found, the input to acquire the interpretation of inflected infinitives is ambiguous.

There are indeed data suggesting that the morphology and the interpretation of inflected infinitives does not develop at the same pace. Santos, Rothman, Pires & Duarte (2013) report the spontaneous production of inflected infinitives in purpose clauses around 2;0; Santos, Gonçalves & Hyams (2016), using a sentence completion task, have found production of inflected infinitives under causatives and perception verbs, as well as under object control verbs. However, Pires, Rothman & Santos (2011), who used a grammaticality judgment task to test knowledge of the morphology and the distribution of inflected infinitives and a picture-choice task to test the interpretation of inflected infinitives, show a mismatch in the development of the two types of knowledge: at 6 years, children already show knowledge of the morphology and distribution of inflected infinitives, but only at 9 years they restrict the interpretation of inflected infinitives to the adult interpretation.

### 3. The Study

#### 3.1. Research Questions

Given the state of the art described in the previous section, we are left with different questions concerning both the acquisition of control with ditransitives in general and the particular acquisition of object control with inflected and uninflected infinitives in Portuguese.

As for the acquisition of control in general, both an analysis of control as movement and a *smuggling* approach to subject control in ditransitives predict an initial / default preference for object control (see section 1). In order to test such default preference, we should test novel verbs.

We would equally like to know more about the effect of inflected infinitives in the interpretation and acquisition of object control structures. If children (and adults) give distinct interpretations to inflected and uninflected infinitives under object control verbs, this might play a role in the particular difficulty associated to the acquisition of object control in Portuguese.

Therefore, we aim at answering the following research questions:

- 1) How do children interpret the subject of an infinitive under a novel ditransitive verb?
- 2) Given that European Portuguese displays inflected infinitives in object control, does inflection on the infinitive affect the interpretation in this context?

Concerning the question in 1), we expect to find a preference for object control (in contrast with subject control) in the earliest ages tested. If subject control is also an option for the interpretation of structures with novel verbs, this reading is expected to occur more often in the case of older children or adults, given the fact that previous literature associates subject control readings in ditransitives to operations more complex to children (moving across an intervener or *smuggling*).

Concerning the question in 2), different possible outcomes were considered. If children take the subject of the inflected infinitive under an object control verb as a canonical inflected infinitive, which creates a non-control context, children will deviate from the expected (object) control readings. If inflected infinitives under object control verbs indeed justify partial or split control readings, and if children are sensitive to this, both the matrix subject and the matrix object may be taken as the antecedents of the subject of an inflected infinitive in object control structures. Finally, we anticipated that inflected infinitives may take longer to be processed if they are associated to a wider set of possible readings (exhaustive and / or partial control).

#### 3.2. Method and Participants

To evaluate the different predictions enumerated in the preceding section, we present the results of two experiments measuring reaction times in a picture-

choice task, one involving pseudowords (verbs) and the other object control verbs in similar frames. In the two experiments, we manipulated inflection in the infinitive. Every subject answered to both experiments, with at least 5 days interval between the two.

Even though the pseudoword experiment (Experiment 1) was always applied before the experiment with existing verbs (Experiment 2), we present here first the experiment with control verbs (*ajudar* ‘help’, *ensinar* ‘teach’ and *obrigar* ‘force’). Figure 1 is an example (reduced to black and white) of the set of four pictures presented with one of the test items.

**Figure 1. Example of a set of pictures used to test object control**



Each experiment tests 24 items (12 inflected and 12 uninflected infinitives under object control verbs) and 48 distractors, divided in two different lists and randomized within each list. Each subject answered only to one of the lists. The pictures in Figure 1 correspond to what was used to test sentences such as (6) and (7). For the set of pictures in Figure 1, sentence (6) would occur in one list and sentence (7) in the other list. Each participant sees only one of the lists. In these experiments, both the matrix subject and the object were always plural to avoid forcing a particular interpretation of the inflected infinitive. The study of other possible combinations of number features is left for further research.

- (6) As vacas obrigaram as zebras a cozinhar.  
 the cows forced the zebras PREP cook.INF  
 ‘The cows forced the zebras to cook.’
- (7) As vacas obrigaram as zebras a cozinhareem.  
 the cows forced the zebras PREP cook.INF.3PL  
 ‘The cows forced the zebras to cook.’

Considering the sentences in (6) and (7), the choice of the picture in the down left corner corresponds to an object control reading. The picture in the upper right corner would correspond to a subject control reading. The picture in the upper left corner corresponds to a split reading (both the matrix subject and the object act as antecedents), which could also obtain if the inflected infinitive favours a partial reading (the interpretation of the embedded subject corresponds to the controller and some other entity, see discussion concerning example 5 above). The picture in the down right corner is a distractor.

The examples in (6) and (7) illustrate the type of sentences tested in Experiment 2. The object control verbs tested were *ajudar* ‘help’, *ensinar* ‘teach’ and *obrigar* ‘force’.

This experiment was preceded by Experiment 1, which presented the children similar sentences with pseudowords (in italics) replacing the matrix verb (examples in (8) and (9)).

- (8) As vacas *paritaram* as zebras a cozinhar.  
the cows Pseudoword the zebras PREP cook.INF  
‘The cows Pseudoword the zebras to cook.’

- (9) As vacas *paritaram* as zebras a cozinhare[m].  
the cows Pseudoword the zebras PREP cook.INF.3PL  
‘The cows Pseudoword the zebras to cook.’

The experiments were preceded by a naming task, centered on the recognition of the different characters (animals) occurring in the pictures.

The experiment was presented in E-prime. The recorded sentences occurred with a blank picture presenting a fixation point at the centre. After 4000 ms (all the sentences were aligned to end at this point), the children were presented a screen with four pictures (see Figure 1) and pressed a button corresponding to the colour of the frame of the picture they wanted to choose (red, green, blue or yellow). The distribution of reading-colour pairings was balanced across the experiment. Two dependent variables were considered: picture choice and reaction time (RT).

The participants in this study were 30 4-year-old children (mean 4;6.6), 30 5-year-old children (mean 5;8.3) and 30 adults with no background in Linguistics.

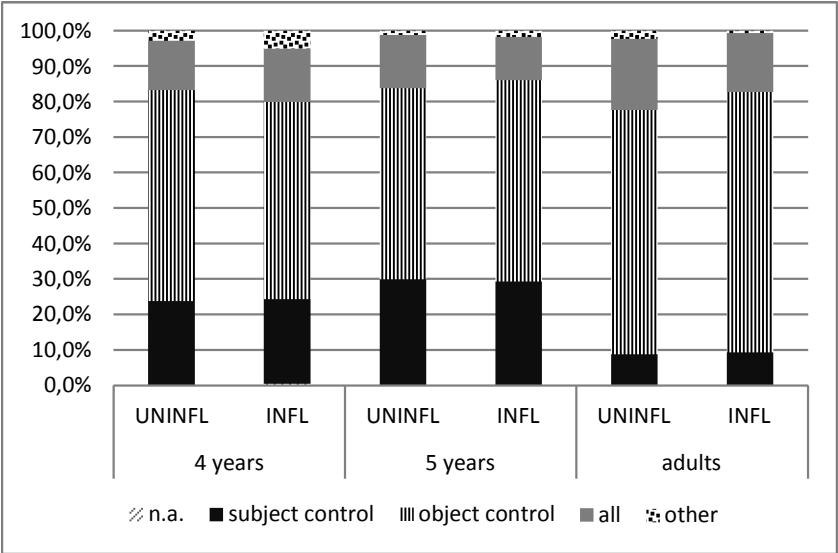
## 4. Results

In this section, we present the results obtained in the two tasks. We start by presenting the results of the picture choice in each experiment (sections 4.1. and 4.2.) and in section 4.3 we present the RT results in the two experiments. For the statistical analysis, we applied a Generalized Linear Mixed Model (GLMM), performed in SPSS 22.

4.1. Experiment 1: Pseudowords (verbs)

We start by presenting the results of Experiment 1, the experiment testing the interpretation of sentences with pseudowords with a distribution of ditransitive control verbs. Figure 2 presents the percentages of each type of reading (corresponding to the choice of particular pictures), namely, subject control and object control readings, split / partial control reading (the reading referred to in the Figure as “all”, i.e. a case in which both matrix subject and object were taken as antecedents of the embedded subject) and the choice of the distractor picture (“other” in the Figure).

Figure 2. Results in Experiment 1 (picture choice)



The observation of the graph shows that object control is indeed the preferred answer for all the groups tested. However, and to some extent surprisingly, the adult group is the group who more often gives an object control reading. In contrast, choice of a subject control reading oscillates between 20% and 30% in the child groups, contrasting with adults, who chose this reading only in 10% of the cases. The observation of the graph also suggests that inflection in the infinitive does not result in different answers.

Since we were interested in how inflected infinitives affected the probability to choose an object control answer across groups and conditions, we built a GLMM model for object control answers (vs. other answers). Fixed factors entered into the model were Group (4 years / 5 years / adults), Condition (inflected vs. uninflected infinitives) and a Condition by Group interaction.

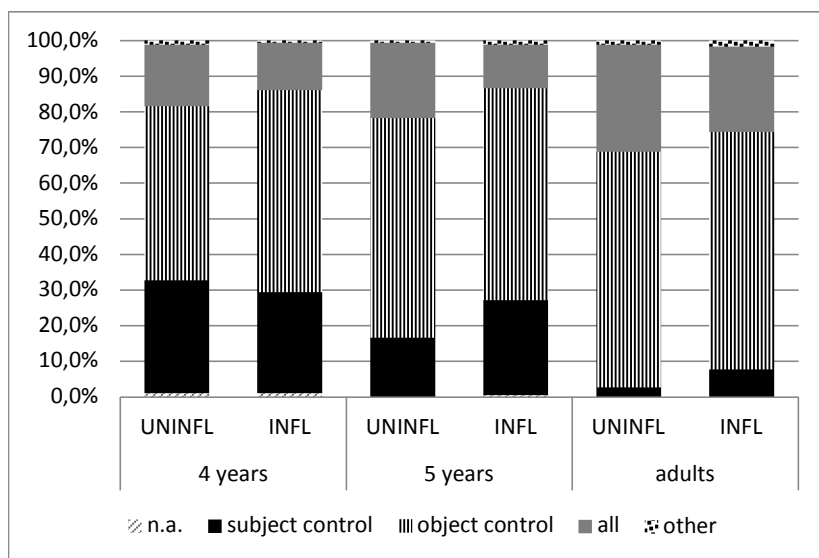


Subject was entered as a random factor. The model shows no effect of Condition and no effect of the Condition by Group interaction; in contrast, it shows a main effect of Group (age) ( $p=.015$ ). Pairwise Sidak-corrected analyses included in the model show significant differences between the adult control group and each of the two child groups (adults vs. 4 years,  $t(1074)=2.373$ ,  $p=.035$ ; adults vs. 5 years,  $t(1074)=2.764$ ,  $p=.017$ ), but no significant differences between the two child groups.

## 4.2. Experiment 2: Verbs

The results obtained in Experiment 2 are represented in Figure 3 (percentage of each type of reading, see also the description of Figure 2). We recall that in this case three different object control verbs were tested (*obligar* ‘force’, *ajudar* ‘help’, *ensinar* ‘teach’).

**Figure 3. Results in Experiment 2 (picture choice)**



Also in this case, the observation of the graph shows that overall object control readings are chosen more often than subject control readings; but it also shows that, as in the case of Experiment 1, subject control is also a choice for the child groups, in contrast with the residual status of this option in the case of the adult group. As for the differences between the results obtained in the two conditions manipulating inflection on the infinitive, the results seem less clear: no relevant differences in the case of 4 year-olds and adults; some apparent differences in the case of the 5-year-old group.

As in the case of Experiment 1, we analysed the data using a GLMM model for object control answers (vs. other answers). Fixed factors entered into the model were Group (4 years / 5 years / adults), Condition (inflected vs. uninflected infinitives), Verb, a Condition by Group interaction and a Verb by Group interaction. Subject was entered as a random factor. The model shows no significant effects of Condition or Condition by Group. However, it shows significant effects of Group ( $p=.009$ ), Verb ( $p<.001$ ), and Verb by Group ( $p<.001$ ).

The effect of the verb itself points to the relevance of the verb semantics in the choice of an interpretation. Globally, *obligar* 'force' justifies more object control answers than the two other verbs tested (*ajudar* 'help' and *ensinar* 'teach'). When we consider the choice of object control answers by each group in the case of items with each of the three verbs, no significant differences between the groups were found for *ajudar* 'help' and *ensinar* 'teach' (the verbs justifying lower choice of object control), but a significant difference was found between adults and 4 year-olds in the interpretation of *obligar* 'force' (pairwise Sidak corrected comparison, adults vs. 4 years,  $t(1068)=5.179$ ,  $p<.001$ ); as well as between adults and 5 year-olds ( $t(1068)=2.674$ ,  $p=.013$ ). Adults more often give object control readings to *obligar* 'force' than children.

At least in the case of adults, we interpret this difference between the verbs as a result of pragmatic inferences that are allowed in the interpretation of *ajudar* 'help' and *ensinar* 'teach' but less likely in the interpretation of *obligar* 'force'. These pragmatic inferences would allow deviating from object control readings. Basically, the interpretation of *ajudar* 'help' or *ensinar* 'teach' would allow the inference that the one who helps or teaches (the matrix subject) also performs the action corresponding to the embedded clause (when one helps someone doing something, one may do it too) and, therefore, less object control readings would be given to items with these verbs than to items testing *obligar* 'force'. All groups indeed give less object control answers to *ajudar* 'help' or *ensinar* 'teach' than to *obligar* 'force'. However, in the case of *obligar* 'force', adults clearly chose the object control reading (close to 100%), but children, especially 4 year-olds, and to some extent 5-year-olds, still deviate from the choice of object control (thus justifying the significant difference between groups in the interpretation of *obligar* 'force'). Given that 4-year-olds (and to some extent 5 year-olds) also deviate from the object control reading in the case of *obligar* 'force', we suggest that they do not deviate from the object control reading in general because of pragmatic inferences, but for some other factors to be determined and which also justified less object control readings in the child groups in Experiment 1, with pseudowords (verbs), and when no semantic factors in the interpretation of the verb were at stake. We will get back to this in the next section, when exploring Reaction Time measurements.

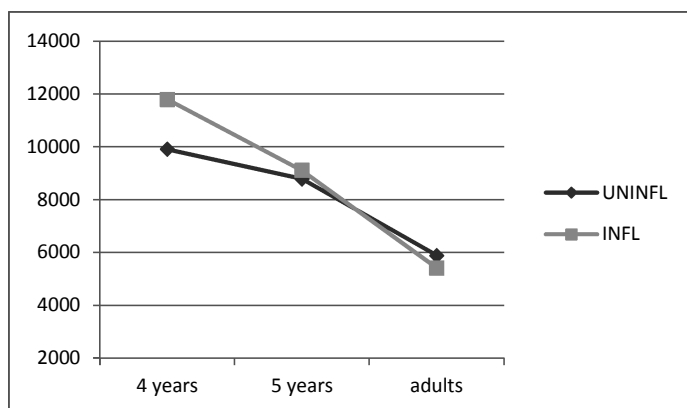
As a final remark, we highlight that no effect of inflection on the infinitive (Condition) was found in the results of this experiment.

### 4.3. Reaction Times (experiments 1 and 2)

In this section, we very briefly present the results obtained in the analysis of RT in the two experiments. When we included this measurement in the experiment, we were aiming at assessing the effects of inflection on the infinitive in the interpretation of the sentences: higher RTs were expected if inflected infinitives were associated to a wider set of readings, i.e. the inflected infinitive induced the subject to consider a partial control reading. Even though the data on picture choice did not show an effect of inflection, we still need to know if inflected infinitives take longer to be processed.

We first present the results of Experiment 1, in Figure 4, representing RT (in ms.) by Group and Condition. In general, older groups show lower RT, something expected but not relevant for the discussion carried out in the paper.

**Figure 4. Reaction Time by Group and Condition (Experiment 1)**

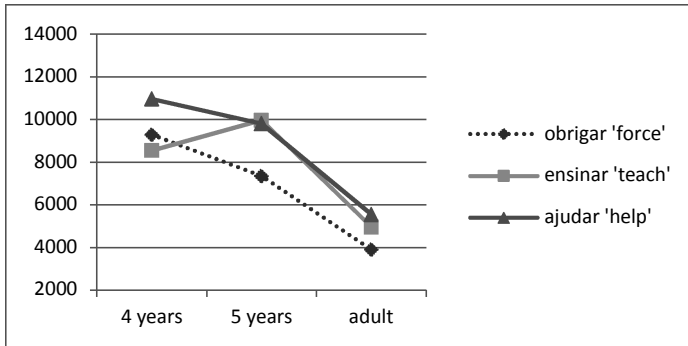


In this case, we analysed the data by using a GLMM with a logarithm link function to deal with the violation of the assumption of normality of the residuals. Subject was entered as a random factor and Group, Condition and a Condition by Group interaction were entered as fixed factors in the model. The model showed a significant effect of Group ( $p < .001$ ), as expected. It showed no significant effect of Condition, but a significant effect of the Condition by Group interaction ( $p = .025$ ). As represented in the Figure 4, only for the 4 year-old group we find a significant difference between conditions, with inflected infinitives justifying higher RTs ( $p < .001$ ), a result which goes in the expected direction.

A similar analysis was tried for RT in Experiment 2, but this time Verb and a Verb by Group interaction were entered into the model, along with Group, Condition and Condition by Group. Again we found a main effect of group ( $p < .001$ ), with younger children presenting higher RT, and no effect of Condition. However, a Condition by Group effect was found ( $p = .046$ ), as well

as significant effects of Verb ( $p<.001$ ) and Group by Verb ( $p<.001$ ). Given the relevance of the latter effect, also in light of the results on picture choice, we represent in Figure 5 RT by Group and Verb.

**Figure 5. Reaction Time by Group and Verb (Experiment 2)**



As we can see, in the case of adults and 5-year-olds, lower RTs are found with the verb *obligar* 'force'. This result is in agreement with the idea that the two other verbs considered (*ajudar* 'help' and *ensinar* 'teach') are associated to higher ambiguity (therefore, higher RT), due to the pragmatic inferences that they allow. The difference between verbs is not seen in the case of the 4 year-old group.

In the case of the Condition by Group interaction, the (Sidak corrected) pairwise comparisons included in the model show only in the case of 4-year-olds a significant difference between RT in inflected and uninflected infinitive items (uninflected vs. inflected  $t(1068)=2.439$ ,  $p=.015$ ), but in this case a lower RT is found with inflected than with uninflected infinitives, contrary to what was found in Experiment 1.

## 5. Discussion and conclusion

In this final section, we discuss to what extent the results obtained in the experiments allow answering the initial research questions.

First, we aimed at determining whether there is indeed a default and initial preference for object control, observable when subjects face a new verb. We did confirm a preference for object control, since all groups give more object control answers than subject control or partial / split control answers. Nevertheless, the results do not allow the conclusion that such preference is due to a difficulty with alternative analyses, namely a difficulty with subject control to be specifically found in children. The children in these experiments deviate from object control significantly more often than adults, and when they deviate from the expected object control reading, the child groups often give subject control answers. These results thus argue against the view that children avoid subject

control and prefer object control. To this extent, these results do not seem to be in agreement with the view that subject control would result in an intervention configuration that creates difficulties to children or the view that subject control involves an operation difficult to children, namely *smuggling*.

Of course, given the results obtained, we need to explain why subject control is an option especially for children. Even though we cannot develop the issue here, Boland, Tanenhaus & Garnsey (1990) suggested that subject control could have a processing advantage, since in that case the same entity is the ‘doer’ in the event denoted by the matrix verb and in the embedded event. An alternative explanation is suggesting a parallel between the interpretation of controlled and non-controlled null subjects: children would extend to control structures the tendency to interpret a null embedded subject as coreferent with the matrix subject (see Carminati, 2002). Of course this would mean a delay in the acquisition of control, since this would imply the possibility of interpreting a controlled subject as non-controlled. In that case, it is possible that this effect is associated to null subject languages and specifically to the fact that Portuguese has non-controlled infinitives (canonical inflected infinitives). In that case, the results we obtained may not sufficiently tell us about control. The issue is left to further research.

Concerning the effects of the inflected / uninflected infinitive contrast in object control structures, no significant effects were found in the choice of an interpretation and the effects found in RT were contradictory and difficult to interpret, therefore inconclusive.

## References

- Agostinho, Celina (2014). *The acquisition of control in European Portuguese complement clauses*. MA dissertation. Lisbon: University of Lisbon.
- Agostinho, Celina, Santos, Ana Lúcia & Duarte, Inês (2018). The acquisition of control in European Portuguese. In Ana Lúcia Santos & Anabela Gonçalves (Eds.), *Complement clauses in Portuguese: Syntax and acquisition*, (263-293). Amsterdam: John Benjamins.
- Belletti, Adriana & Rizzi, Luigi (2013). Ways of avoiding intervention: Some thoughts on the development of object relatives, passive, and control. *Rich Languages From Poor Inputs*, 2, 1–11.
- Boeckx, Cedric, Hornstein, Norbert & Nunes, Jairo (2010). *Control as movement*. Vol. 126. Cambridge, UK: Cambridge University Press.
- Boland, Julie E., Tanenhaus, Michael K. & Garnsey, Susan M. (1990). Evidence for the immediate use of verb control information in sentence processing. *Journal of Memory and Language*, 29, 413–432.
- Carminati, Maria Nella (2002). *The processing of Italian subject pronouns*. PhD dissertation. University of Massachusetts at Amherst.
- Chomsky, Carol (1969). *The acquisition of syntax in children from 5 to 10*. 1972 edition. Cambridge, MA: The MIT Press.
- Friedmann, Naama, Belletti, Adriana & Rizzi, Luigi (2009). Relativized relatives: Types of intervention in the acquisition of A-bar dependencies. *Lingua*, 119, 67–88.
- Hornstein, Norbert (1999). Movement and control. *Linguistic Inquiry*, 30(1), 69–96.

- Hornstein, Norbert & Polinsky, Maria (2010). Control as movement: Across languages and constructions. In Norbert Hornstein & Maria Polinsky (Eds.), *Movement theory of control*. Amsterdam: John Benjamins.
- Landau, Idan (2013). *Control in generative grammar: A research companion*. Cambridge, UK: Cambridge University Press.
- Mateu, Victoria (2016). *Intervention effects in the acquisition of raising and control: Evidence from English and Spanish*. PhD Dissertation. UCLA.
- Martins, Ana Maria & Nunes, Jairo (2017). Deletion of reflexive clitics with the verb *custar* in European Portuguese: An MTC account. *Journal of Portuguese Linguistics*, 16(2), 1-25.
- Modesto, Marcello (2010). What Brazilian Portuguese says about control: Remarks on Boeckx & Hornstein. *Syntax*, 13(1), 78-96.
- Pires, Acrísio, Rothman, Jason & Santos, Ana Lúcia (2011). L1 acquisition of interface properties across Portuguese dialects: Modular and interdisciplinary interfaces as sources of explanation. *Lingua*, 121(4), 605-622.
- Rizzi, Luigi (1990). *Relativized minimality*. Cambridge, Mass.: The MIT Press.
- Rosenbaum, Peter S. (1967). *The grammar of English predicate complementation*. 3rd printing, March 1972. Cambridge, MA: The MIT Press
- Santos, Ana Lúcia, Gonçalves, Anabela & Hyams, Nina (2016). Aspects of the acquisition of object control and ECM-type verbs in European Portuguese. *Language Acquisition*, 23(3), 199-233.
- Santos, Ana Lúcia, Rothman, Jason, Pires, Acrísio, Duarte, Inês (2013). Early or late acquisition of inflected infinitives in European Portuguese? Evidence from spontaneous production data. In Misha Becker, John Grinstead & Jason Rothman (Eds.), *Generative Linguistics and Acquisition: Studies in honor of Nina M. Hyams*, (65-88). Philadelphia: John Benjamins.
- Sheehan, Michelle (2018). Inflected infinitival complements in European Portuguese. In Ana Lúcia Santos & Anabela Gonçalves (Eds.), *Complement clauses in Portuguese: Syntax and acquisition*. Amsterdam: John Benjamins.
- Snyder, William & Hyams, Nina (2015). Minimality effects in children's passives. In Elisa Di Domenico, Cornelia Hamann & Simona Matteini (Eds.), *Structures, Strategies and Beyond. Studies in honour of Adriana Belletti* (343-368). Amsterdam: John Benjamins.

# Proceedings of the 43rd annual Boston University Conference on Language Development

edited by Megan M. Brown  
and Brady Dailey

Cascadilla Press    Somerville, MA    2019

## **Copyright information**

Proceedings of the 43rd annual Boston University Conference on Language Development  
© 2019 Cascadilla Press. All rights reserved

Copyright notices are located at the bottom of the first page of each paper.  
Reprints for course packs can be authorized by Cascadilla Press.

ISSN 1080-692X  
ISBN 978-1-57473-096-8 (2 volume set, paperback)

## **Ordering information**

To order a copy of the proceedings or to place a standing order, contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA  
phone: 1-617-776-2370, [sales@cascadilla.com](mailto:sales@cascadilla.com), [www.cascadilla.com](http://www.cascadilla.com)